

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Group Art Unit: 3772

Lowell R. Wedemeyer

Examiner: Brandon Jackson

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FOR: Cheek Path Airway and Cheek Pouch Anchor

RESPONSE TRAVERSING REJECTIONS MADE IN  
OFFICE ACTION MAILED OCTOBER, 2008

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

This is a response traversing rejection of claims 33-43 made in the Office Action mailed October, 2008 upon re-opening of prosecution to assert new grounds of rejection after finding Applicant's opening brief on appeal to be persuasive.

Claims 1 - 32 have been withdrawn from consideration pursuant to the election required in the First Office Action.

Claims 33 - 43 remain under consideration in this application.

Claims 33 - 43 have been rejected in the Office Action mailed October, 2008.

Applicant here addresses only new arguments made by the Examiner made upon reopening prosecution.

**CLAIM REJECTIONS**

Claims 33 -34, 37-38, 40- 41 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Liou (US Patent 6,273,713).

Claims 35 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liou (US Patent 6,273,713) in view of Rodriguez (US Patent 6,428,316).

Claims 36 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liou (US Patent 6,273,713) in view of Seyler (US Patent 4,889,327).

### **Summary:**

This response shows that the Examiner's determination of equivalence between the Liou device and Applicant's claimed cheek pouch anchor is both factually and legally in error. Applicant provides a summary of the errors and then a detailed explanation of each error:

Error A. The Examiner is factually misstating both the structure of the Liou device and the manner in which the Liou device operates, contrary to the objective disclosures by Liou. Contrary to the Examiner's assertion, Liou's device (Figs 3, 5) cannot operate as an "anchor" wholly "***within*** a user's cheek pouch."

Liou's barrel bands (13, 23) extend ***into*** but also necessarily extend outside of the "user's cheek pouch" as that term is specially defined in Applicant's specification paragraphs [0040] and [0041] and illustrated in Applicant's Figure 3. This is because a "user's cheek pouch" by special definition "***lies between the inner wall of one of such user's two cheeks and the cheek-adjacent side of a such user's dental arches, gums and teeth.***" Note that the buccal (cheek side) surfaces of a user's teeth are part of the frame of a user's cheek pouch. However, the remainder of a user's teeth, such as the lingual (tongue adjacent) surfaces and the surfaces between adjoining teeth, are not part of a "user's cheek pouch" as specifically defined in Applicant's Specification ¶ [0041]. Therefore, Applicant's claim limitation "***within*** a user's cheek pouch" definitively excludes Liou's conception by excluding Liou's barrel bands (Figs. 3, 4, elements 13, 23).

Liou's barrel bands necessarily extend outside a "user's cheek pouch." Applicant's Specification, ¶¶ [0041], [0194] and Fig. 3. Applicant's Specification ¶ [0049] specifically notes the disadvantages of dental devices that engage the user's teeth or dental arches or palate. See also Applicant's Specification, ¶¶ [0029], [0030], and [0050].

Liou mislabels Liou's elements 14 and 24 as "anchors," but Liou's elements 14 and

24 are simply attachments that link Liou's device to barrel bands 13 and 23. It is Liou's barrel bands that actually anchor Liou's device to the patient's teeth. In the absence of Liou's barrel bands 13 and 23 wrapped about the user's molar teeth (1, 2), the Examiner cannot show that Liou's device is even operable as an anchor. As disclosed and depicted in Liou's specification, if Liou's device were not anchored to the teeth by barrel bands 13 and 23, then Liou's device would be subject to all of the slippage and rotation problems described in Applicant's Specification, ¶¶ [0058] - [0064], inclusive.

This patentable, physical distinction negates equivalence between Liou's device and Applicant's cheek pouch anchor, as claimed. This lack of physical equivalence negates each and all of the Examiner's new theories of obviousness.

Error B. It is factually incorrect to equate the function of Liou's device and the function of Applicant's anchor. Liou's device does not perform the identical function specified in Applicant's claims in substantially the same way and Liou does not produce substantially the same results as Applicant's cheek pouch anchor.

Conceptually, Liou teaches how to impose coercive forces that constrain jaw motion in order to compel structural changes in teeth and bone. Applicant's cheek pouch anchor teaches the opposite: how to affirmatively avoid or minimize forces impinging on the user's teeth and jaws, leaving jaw motion unconstrained and tooth and jaw structure unmodified, while anchoring a device in the patient's mouth. Applicant's Specification, ¶¶ [0049], [0050], [0064], [0072], [0194] and Fig. 3.

This fundamental difference in objectives explains why it is so non-obvious for experts in orthodontic dental devices to create Applicant's cheek pouch anchor. The Examiner's hypotheses arise from an orthodontic mind-set to coerce teeth and bones, which is the antithesis of the teaching in Applicant's specification.

The mode of operation of Applicant's claimed anchor and of Liou's device plainly are not equivalent. Applicant's cheek pouch anchor can readily be inserted and removed by a user. Liou's device is locked onto a patient's teeth by barrel bands (13, 23). Liou's device ultimately must be compressed, if it can be compressed at all, by the power of the user's teeth, transmitted from the teeth through Liou's barrel bands (13, 23). Indeed, it is not clear from Liou's disclosure (figures 4 and 6) whether or not a patient can compress the patient's rear molars (1, 2) into occlusion against the coercive force of Liou's jaw-restructuring device. Applicant's device is designed to avoid interference with the user's

teeth and jaws. Applicant's anchor is structured and claimed to be operable by only the compressive power of the tissues of a user's cheek pouch -- which by common knowledge is inherently less than the compressive power of a user's teeth. Plainly, the magnitude of force is very different between Liou's device and Appellant's cheek pouch anchor.

Appellant's anchor does not achieve the same result as Liou's device. Liou's device coerces structural changes in a patient's teeth and bone by imposing forces upon a patient's teeth. Applicant's cheek pouch anchor is designed to avoid interference with free operation of a user's teeth and jaws, and does not coerce structural changes in a user's jaw.

Error C. The Examiner does not make out a prima facie case of obviousness of claims 36 and 39 by reason of Liou in light of Seyler. Liou's device is an orthodontic appliance designed to impart sufficient force ***along a particular vector*** to restructure a patient's teeth and bone structure. See angle  $\theta$  in Liou's Fig. 3. The Examiner attempts, unsuccessfully, to use two steps to import into Liou's device the particular mechanism of adjustment that is claimed for Applicant's cheek pouch anchor.

The Examiner's first step is to replace Liou's elastic element 8 with the multiple loops of Seyler's coil, hypothetically motivated by a purpose to "vary the force" imposed by Liou's elastic element 8 upon a patient's teeth and jaws. Office Action, October, 2008, p. 4. Seyler multiplies the force of a coiled spring by use of multiple parallel strands of wire in the coil (fig. 4) for use in an automotive application. The Examiner here hypothesizes that an orthodontist might desire the extra "force" of Seyler's coiled spring to aid restructuring teeth and bone. In this first step, the Examiner makes no attempt to show that Liou's elastic element 8 provides insufficient force such that an orthodontist would find the extra force of Seyler's coiled spring advantageous. That extra force might even be disadvantageous. Thus, the Examiner's first step is purely speculative and unfounded.

The Examiner's second step is even more speculative. The Examiner's hypothesis is that after importing Seyler's coil to vary the force, an orthodontist might adjust the span size of one loop in Seyler's coil conversely to the size of another loop in Seyler's coil, and thereby might adjust the whole span size of Seyler's coil.

Contrary to the Examiner's hypothesis, an orthodontist would not be motivated to take the Examiner's hypothetical second step for two independent reasons:

(A) because Liou already has incorporated a simple method of adjusting the span

size of Liou's device by sliding sleeve 81 to extend or retract arm 84, so no one would be motivated to use the Examiner's much more complicated method; and

(B) because adjusting the span size of Liou's elastic element 8 (rather than sleeve 81 and arms 84) could tend to mis-align the force vectors against the patient's teeth and jaw that are critical to the correct restructuring of teeth and bone. (Liou, col. 2, line 65 - col. 3, line 11; claims 1, 2, and 4 -6; fig. 3, angle  $\theta$ ; figs. 4 and 6). If such mis-alignment occurred it would tend to cause malformed restructuring of teeth and bone, defeating Liou's purpose. A prudent person of ordinary skill would be very cautious about anything that could cause mis-alignment of the force vectors.

Thus, the Examiner does not show any credible motivation or suggestion for an orthodontist to perceive and implement both of the Examiner's two steps. The Examiner's two-step hypothesis is just unfounded speculation.

Error D. Even if the Examiner's speculative two-step modification of Liou were to occur, Liou's device still would not be substantially equivalent to Applicant's cheek pouch anchor. This is (A) because Liou imposes coercive force to restructure a patient's teeth and bones, and (B) because Liou's device necessarily has to be attached to the patient's teeth in order to perform its intended function and therefore cannot act as an anchor wholly "**within** a user's cheek pocket."

By patentable physical distinction, Applicant's cheek pouch anchor is expressly designed to avoid attachment to the user's teeth and Applicant's anchor does not impart force to remodel teeth and bone structure. See Applicant's Specification, ¶¶ [0072], [0194] and Fig. 3. Therefore, the Examiner's hypothetical modification of Liou's device in light of Seyler to vary the power imparted to the patient's teeth and bone structure would not **necessarily** or reliably achieve the adjustment capability claimed for Applicant's invention.

Error E. The Examiner does not make out a prima facie case of obviousness of claims 35 and 42 by reason of Liou in view of Rodriquez. Liou is not substantially equivalent to Applicant's cheek pouch anchor, as explained above. Rodriquez does not cure this fundamental non-equivalence. Furthermore, the Examiner does not show any credible motivation for an orthodontist to hang a saliva suction tube on Liou's orthodontic device. This is because the force exerted by hanging such a suction tube on the Liou device would tend to cause unpredictable, variable misalignment of the force vectors that

Liou's device is intended to impose at a precise angle to restructure a patient's teeth and bone. In addition, use of a dentist's saliva suction tube is intended to be transient only during dental procedures whereas the Liou device is intended to be indwelling in the patient's mouth for extended periods in the absence of the dentist. Why would any dentist leave a saliva suction tube in a patient's mouth attached to an orthodontic restructuring device? The Examiner does not make out a credible motivation.

Error F. Because Liou's device is not substantially equivalent to Applicant's cheek pouch anchor, as claimed, therefore the combination of Liou with the premoistened pad of Diaz (US Patent 4,041,937), to release a substance into a patient's mouth, does not render obvious the combination of Applicant's anchor with such a premoistened pad. The lack of equivalence of Liou's device to Applicant's claimed cheek pouch anchor defeats the Examiner's obviousness analysis, even though use of a pad to release substances is well known in prior art.

#### **Detailed Response.**

The Examiner has not made out a prima facie case of equivalence between Liou's device and Applicant's device as claimed. MPEP 2183. Unless an element in prior art performs the identical function specified in Applicant's claim, that prior art cannot be an equivalent for the purposes of 35 U.S.C. 112, sixth paragraph. *MPEP 2184, II*, citing *Pennwalt Corp. v. Durand-Wayland, Inc.* 833 F.2d 931, 4 USPQ2d 1737 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 961 (1988). Because Liou lacks substantial equivalence to Applicant's claimed device, the combination of Liou with Rodriguez, or Seyler, or Diaz does not show obviousness.

#### **Liou's Device Is Not Equivalent to Applicant's Device and Claims; Factually Incorrect Statement of the Structure and Function of the Liou Device By Examiner.**

The Examiner incorrectly applies Applicant's explicitly closed claim language in claims 33 and 39-43, that Applicant's cheek pouch anchor compresses "**within** a user's cheek pouch while a user's lips and jaws open and close". Applicant's claim language "user's cheek pouch" must be fairly and reasonably construed according to the explicit definition for that phrase in Specification paragraph [0041] and illustrated in Fig. 3.

Liou's barrel bands (13, 23) encircling a patient's molars reach **into**, but also extend beyond a user's cheek pouch, so those barrel bands are not "**within** a user's cheek

pouch."

The Examiner cannot show that in the absence of the barrel bands 13 and 23, Liou's device (Fig. 3, elements 81-84 and 841) can function as an anchor in the patient's mouth. This is true even if one attaches Liou's misnamed "anchors" 14 and 24 to Liou's device (elements 8, 81-84 and 841), but does not attach Liou's "anchors" 14 and 24 to barrel bands 13 and 23. That is, if one severs the elements of Liou's conception that lie wholly "*within* a user's cheek pouch" (8, 81-84, 841, 14 and 24) from those elements that necessarily do extend outside a "user's cheek pouch", then Liou's device ceases to be anchored within the patient's mouth. Rather, Liou's elements 8, 81-84, 841, 14 and 24 as a unit then will have degrees of freedom to rotate and slide within the "user's cheek pouch." See Applicant's Specification ¶¶ [0058] - [0064], inclusive. When Liou's device is not attached to barrel bands 13 and 23, there is nothing to prevent Liou's device from intruding between the occlusal (biting) surfaces of the patient's teeth, or into the lingual area between the patient's dental arches, or slipping into a patient's throat and gagging the patient, or slipping out of the patient's mouth between a patient's open lips. It is obvious that when severed from barrel bands 13 and 23, Liou's remaining elements would be unstable in a user's cheek pouch. When severed from barrel bands (13, 23), Liou's elements (8, 81-84, 841, 14 and 24) would not reliably bridge the gap between the occlusal surfaces of the patient's upper and lower teeth as the patient's jaw opens wide. This is obvious when one views Liou's Figure 4.

Plainly, Liou does not perform the identical function specified in Applicant's claims in substantially the same way and Liou does not produce substantially the same results as Applicant's cheek pouch anchor. MPEP 2184, II.(A), citing *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 54 USPQ2d 1308 (Fed. Cir. 2000). The portions of Liou's device that are wholly within a user's cheek pouch cannot perform the function of Applicant's cheek pouch anchor.

Applicant thus has proved that Liou is not equivalent to Applicant's anchor as claimed. MPEP 2184.

The forces applied by Applicant's anchor are patentably distinct from the forces applied by Liou's device. Even if a patient could compress Liou's device with the power of a patient's teeth and jaws transmitted through barrel bands (13, 23), still compression of Liou's device with the greater power of a patient's teeth is not equivalent to compression of

Applicant's anchor with the lesser power of the soft tissues of a user's cheek pocket. *MPEP 2184, II*, citing *Pennwalt Corp. v. Durand-Wayland, Inc.* 833 F.2d 931, 4 USPQ2d 1737 (Fed. Cir. 1987), cert. denied, 484 U.S. 961 (1988).

THE EXAMINER DOES NOT MAKE OUT A PRIMA FACIE CASE FOR OBVIOUSNESS OF LIOU IN VIEW OF SEYLER.

Claims 36 and 39 are rejected under 35 USC 103(a) as being unpatentable over Liou (US Patent 6,273,713) in view of Seyler (US Patent 4,889,327). The Examiner does not make out a prima facie case of obviousness through modification of Liou by Seyler.

The Examiner evidently is approaching Applicant's invention from an orthodontic dentist's point of view, whereby force is applied to teeth and jaws to coerce modifications of teeth and bone structure. Taking this orthodontic point of view, the Examiner hypothesizes a motivation to modify Liou's device with Seyler (US 4,889,327) in order to vary the coercive force Liou's device imparts to a patient's teeth and jaws. Employing this orthodontic point of view, the Examiner then makes a wholly unsupported, speculative jump in which the Examiner imputes to the Liou device adjustability that is equivalent to the adjustability which Applicant claims for the cheek pouch anchor. The Examiner's chain of logic is fatally flawed. Variable force (as in Seyler) is not the same as variable size (as in the whole span size of Applicant's cheek pouch anchor). The Examiner is confounding physically distinct issues. Because the Examiner incorrectly argues from an orthodontist's point of view, the Examiner mis-perceives the problem being solved by Applicant's cheek pouch anchor. The Examiner states as follows:

"However, it is well known in the art that torsion springs can vary the number of loops **in order to vary the force** applied by the spring. Moreover, Seyler teaches a torsion spring (30) comprising a plurality of loops (31). Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the Liou device to have a plurality of loops, as taught by Seyler, **in order to vary the force applied by the device** for specific users." Office Action, October, 2008, p. 4.

Variance of force applied to a user's teeth and jaws is not the problem being solved by Applicant's cheek pouch anchor. Applicant's problem was how to expand and contract the whole span size of the anchor within the user's cheek pouch to assure continuous bridging across the user's inter-occlusal space **while minimizing the forces imposed on the**



***user's jaws and teeth, leaving jaw motion relatively unconstrained.*** See Applicant's Specification, ¶¶ [0029], [0030], [0034], [0050], [0058] - [0064], [0072], [0194] and Fig. 3. The problem Applicant solved is nearly the exact opposite of the problem that the Examiner is mentally locked into because the Examiner takes an orthodontist's point of view.

The Examiner's own conceptual difficulties with Applicant's cheek pouch anchor demonstrate why Applicant's invention was not obvious to one whose expertness is in the orthodontic arts. Even with the teaching of Applicant's invention, the Examiner still is stuck on the inapposite problem of maximizing the coercive forces imposed upon a patient's teeth and jaws. An orthodontic mind-set simply does not supply the motivation needed to perceive and to solve the problem solved by Applicant's cheek pouch anchor.

Seyler's conception is inapposite to Applicant's problem of adjusting whole spring element span size. Seyler's conception is to weld multiple strands of resilient wire (Fig. 4, elements W1 and W2) together before coiling them into a "torsional spring" (Fig. 4, coaxial coils 31 in spring 30). Seyler's purpose is to provide both additional force and safe redundancy in case one of the parallel wires breaks. (Seyler, col. 1, lines 8 - 21.) Seyler places multiple strands of wire in parallel and then welds them together only at their ends (Fig. 4, elements 32, 33), so that "throughout the remainder of the spring, wires W1 and W2 are unconnected and are therefore capable of limited independent displacement or flexure." (Seyler, col. 4, lines 40-42). In this fashion Seyler multiplies the coiled spring's force within nearly the same volume as that of a single-wire spring. Thus, Seyler is concerned with multiplying a coiled spring's force (or more accurately its power), and creating redundancy, with only minimal increase in whole size of the spring. By contrast, Applicant is concerned with adjusting the geographic size of the whole spring's span, without necessarily requiring any change in the force (or power) imparted by the spring to the user's mouth tissues.

The Examiner's does not show how his conception for modifying Liou by reference to Seyler in order to achieve adjustability in Liou is even operable. If (analogously to Applicant's conception) the span size of one of Seyler's parallel wire strands were expanded or contracted conversely to another parallel strand, then it is obvious that Seyler's parallelism would be disrupted. The originally parallel coils when altered asymmetrically with each other would tend to work at cross purposes with each other,

rather than working together in parallel, thereby likely impairing the resilience of the spring as a whole.

Applicant does not find in Seyler any suggestion to adjust the whole span size of the Seyler's multi-strand, coiled spring by adjusting the relative sizes of individual loops within Seyler's multi-strand coils. The Examiner has not pointed out any such suggestion in Seyler. The Examiner took that suggestion from Applicant's invention, by use of hindsight. It is not at all clear how Seyler's conception would make it easier to adjust the whole span size of Seyler's coiled spring analogously to Applicant's mode of adjustability. If anything, the increased forces created by Seyler's conception would render Seyler's device more resistant to use of Applicant's method of adjustment of whole spring span size by converse adjustment of individual loops in Seyler's multi-strand coil. Thus, Seyler's conception teaches away from the adjustability mechanism claimed by Applicant. The Examiner is invited to recall that a wire's inherent properties of ductility and resilience tend to have mutually exclusive ranges of motion and tend to counter each other. While it conceivably might be possible that Seyler's spring wire could simultaneously possess the ductility to be reshaped and still also possess the resilience essential to Seyler's purpose, it is not **necessarily** true that Seyler's spring would possess such a specific balance of resilience and ductility.

Modifying Liou's elastic element 8 with Seyler's multi-strand automobile spring technology might well increase the force that Liou's device imposes on the patient's teeth through Liou's barrel bands 13 and 23. However, if introduction of Seyler's multi-strand spring technology into Liou substantially expanded the whole span of Liou's device (8, 81-84 and 184) then that expansion would tend to impair the intended fit of Liou's device to barrel bands 13 and 23. That is, if Seyler's conception were used to expand the whole spring element span size of Liou's device, then operation according to Liou's intended purpose would tend to be impaired, if not entirely defeated, by Seyler. Why would any orthodontist be motivated to do such a thing?

Liou's device already has means for adjustment by sliding sleeve 83 along arm 81 to extend or retract arm 84. (See Liou, Fig. 5). That sliding does expand or retract whole span size of Liou's device, but there is nothing in Seyler to suggest that such sliding expands the size of Liou's elastic element 8. That is, Liou does not achieve adjustment by the same mechanism as that claimed by Applicant. Even if Liou's elastic element 8 were

modified by use of Seyler's multi-strand, parallel coils to increase the force of Liou's elastic element 8, still sliding Liou's sleeve 83 would not necessarily increase or decrease the whole span size **of Liou's coiled elastic element 8**. Rather, it would simply extend the span of Liou's arms 81 and 84.

Furthermore, if one were to increase the radius of curvature (span size) of Liou's coiled elastic element 8 so as to reliably bridge the user's inter-occlusal gap, then that would tend to adversely affect Liou's critical angle  $\theta$ , which controls the vector of the force that Liou intends to impose on the patient's teeth (1, 2) and jaw. (Liou, Fig. 30; col. 2, line 65 - col. 3, line 11; and claims 1, 2 and 4 - 6.) The Examiner does not show any motivation or suggestion in the prior art to do this. Furthermore, it is obvious that Liou's device must constrain the opening of a patient's jaws, as well as the closing. How could Liou's device coerce structural remodeling of teeth and bone if it did not constrain them? Applicant's cheek pouch anchor does not impose any such constraints on a user's teeth or jaws.

The Examiner's conclusion does not logically follow from the Examiner's hypothesized motivation to increase the force applied to a patient's teeth. Prima facie obviousness of claims 36 and 39 has not been made out by the Examiner.

**The Examiner's Hypothetical Motivation to Vary the Force Imposed by Liou's Elastic Element 8 by Coils of Seyler Does Not By Itself Lead to Applicant's Particular Type of Adjustability And Such An Hypothesis Does Not Qualify As Prior Art.**

The Examiner does not show how a person of ordinary skill in the art having common sense would have made an operable modification of Liou's device that would have rendered Liou's device adjustable equivalently to the adjustability claimed for Applicant's anchor.

The showing the Examiner must make to demonstrate prima facie equivalence cannot be made merely by hypothesizing that one of ordinary skill would have a motivation to adjust Liou's device to vary the force applied to the patient's teeth by the Liou device. The Examiner must go further and articulate some publication or convention in the prior art, or some motivation that one of ordinary skill would have, that would reliably lead one of ordinary skill to a mechanically operable modification of Liou's device. That modified Liou device would have to perform substantially the same function in the same manner with the

same result as Applicant discloses and claims. *MPEP 2184, II*, citing *Pennwalt Corp. v. Durand-Wayland, Inc.* 833 F.2d 931, 4 USPQ2d 1737 (Fed. Cir. 1987), cert. denied, 484 U.S. 961 (1988).

First. The obvious, direct, simple method to adjust the "range of expansion and contraction of the whole spring element span size" of Liou's device 10 would be to use the sleeve adjustment (83) built in by Liou. With such an obvious, simple method of adjusting Liou's device, one of ordinary skill in the art having common sense would have no motive to adjust Liou's whole spring element span size by the complicated, indirect method of introducing multi-strand coils from Seyler and then adjusting the span size of Liou's whole device by conversely adjusting the span sizes of loops in the coils introduced according to Seyler's teaching.

Second. If introduction of multiple loops into Liou's elastic element 8 were followed by converse alteration of individual loops in the coil so as to modify whole span size of Liou's elastic element 8, then that modification would tend to also cause a cascade of changes in the relative force vectors applied to Liou's "anchors" (14, 24) and barrel bands (13, 23). See Liou Figs. 3, 4 and 6. This cascade of changes in the force vectors would threaten the fit and the function of Liou's device. Thus, there would be a strong motivation for one of ordinary skill having common sense to avoid that cascade of changes. Instead, one of ordinary skill having common sense would make the simple adjustment built into Liou, by slidable sleeve (83).

Third. If an adjustment motivated by the Examiner's hypothesized motivation to vary the power of Liou's device did incidentally have a tendency to alter the range of expansion and contraction of Liou's whole device, then there would be a motivation to adjust in a way that did not materially alter the vectors of the forces imposed by Liou's device on the patient's teeth and jaw because that would threaten to change the fit and results of Liou's device.

Fourth. The Examiner's hypothesized motivation to vary the force that Liou's device imposes on a patient's teeth is not equivalent to a specific motivation to alter the "range of expansion and contraction of the whole spring element span size" of Liou's device.

Fifth. The Examiner does not show that modification by one of ordinary skill to combine Liou with Seyler would ***necessarily*** (or even reliably) achieve the specific kind of adjustability that is disclosed and claimed by Applicant. Possible unintended, incidental

effects of introducing multi-wire, multi-loop coils into Liou to increase power and redundancy do not qualify as prior art relative to Applicant's mode of adjustment.

Sixth. When the Examiner speculates that modification of Liou by Seyler might have led one expert in the art to the further idea of adjusting whole spring element span size in Liou, the Examiner fails to show that one of ordinary skill in the art having common sense would have perceived and recognized a special value to such an incidental adjustment of whole spring element span size in Liou as modified by Seyler. It is likely that such an incidental adjustment of Liou's whole spring element span size would have been seen by one of ordinary skill as an adverse effect to be avoided or counter-adjusted. That is not a showing of prior art.

Seventh. The foregoing items first through sixth create a strong inference that the Examiner improperly is reading the teaching of Applicant's invention into Liou by use of hindsight.

**Combination of Liou With Conduit Element 71 of Rodriquez Does Not Render Applicant's Claims 35 and 42 Obvious.**

Claims 35 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liou (US Patent 6,237,713) in view of Rodriquez (US Patent 6,428,316). The Examiner states:

"Liou substantially discloses the claimed invention; see rejections to claims 33 and 42 above. Liou fails to disclose a conduit for fluid. However, Rodriquez discloses a conduit for fluid (17) that can be coupled to Liou cheek anchor (fig. 3) by inserting it through the spring element (8) or by merely resting it upon the cheek anchor (fig. 3, while being at least partially in the cheek pouch. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Liou device with the fluid conduit, as taught by Rodriquez, in order to remove saliva from the user's mouth during dental procedures."

This rejection is fatally flawed because Liou does not substantially disclose the claimed invention, for the reasons specified above. Lack of a conduit for a fluid is not the only patentable distinction between Liou and Applicant's claims 35 and 42.

If the Examiner's point for citation of Rodriquez is only that use of a tube as a conduit for fluid is well known in the prior art, then that limited point is true.

If the Examiner's further point is only that some means for attaching conduits for fluid to other devices also are well known in the prior art, then that also is true. (However, Applicant's specific means for connecting Applicant's cheek pouch anchor to Applicant's "conduit for fluid," by passing the anchor filament through the wall and lumen of the conduit, is both novel and unobvious.)

It still does not follow, however, that one skilled in the orthodontic arts would hang a conduit for fluid on Liou's orthodontic device. This is because that conduit would tend to alter, unpredictably, variably, and adversely, the precise alignment of the vector of force that Liou's device is intended to impose upon the patient's teeth and jaws (Liou, col. 1, line 62 - col. 2, line 10; col. 2, line 53 - col. 3, line 18; Fig. 3 angle  $\theta$ , and claims 1, 2, and 4-6). Moreover, Liou's device is intended to be in-dwelling for extended periods out of the dentist's presence (Liou, col. 2, lines 3 - 5), while the suction tube of Rodriguez is intended to be used only temporarily during dental procedures (Rodriguez, col. 2, lines 29-33). The Examiner fails to make out any motivation to hang on the orthodontic device of Liou a conduit for sucking saliva.

Rodriguez describes (col. 2, lines 33-34) and depicts in Figure 3 a "disposable suction tip 17" attached to a "dental wand 10." The dental wand, including suction tip 17, is intended to be "hand held" by the dentist (col. 2, lines 29-33) and to be attached to an external suction system (col. 1, lines 28 - 33). If one were to immobilize suction tip 17 of Rodriguez's hand-held dental wand, by anchoring that tip through the coil formed by Liou's elastic element 8 or resting it in an anchoring fashion of Liou's device, then that would severely impair the function of Rodriguez's device.

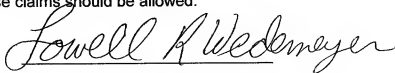
**Liou In View of Diaz Does Not Render Obvious the Combination of Applicant's Cheek Pouch Anchor and Means to Release a Substance Into the User's Mouth From the Anchor.**

The Examiner cites Diaz (US Patent 4,041,937) for the proposition that it was known in the prior art to attach to a dental device a pad that can be premoistened with a substance that is to be released in a patient's mouth. That is true to that limited extent. However, because Applicant's cheek pouch anchor is patentably distinct from Liou, combining such a pad with Applicant's anchor results in a patentably distinct, dependent claim.

## SUMMARY

Applicant respectfully submits that the rejections of claims 33-43 should be withdrawn and all of those claims should be allowed.

October 30, 2008

A handwritten signature in cursive script, reading "Lowell R. Wedemeyer". The signature is written in dark ink and is positioned above a horizontal line.

Lowell R. Wedemeyer, Applicant

Reg. No. 32,010